DOCUMENT RESUME

ED 236 121 SP 022 911

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TITLE Translating Learning Style Theory into Classroom Practice: A Way of Increasing Teacher Effectiveness Through the Determination of Individual Learning Styles.
PUB DATE [82]
NOTE 14p.
PUB TYPE Information Analyses (070) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Classroom Observation Techniques; *Cognitive Style; *Cognitive Tests; Elementary Secondary Education; Evaluation Methods; *Learning Processes; Learning Strategies; Learning Theories; Research Utilization; Student Behavior; *Student Characteristics; *Student Evaluation; Teacher Effectiveness; Teaching Methods; *Teaching Styles
IDENTIFIERS *Action Reflection Relationship

ABSTRACT

The Action Oriented, Reflection Oriented (AORO) observation instrument was designed to help teachers determine their students' cognitive preferences. The assumption underlying the instrument was that learning is enhanced when teaching strategies and materials take into account the student's natural tendency toward action or reflection. AORO categorizes these two preference types as action oriented (extraversion) or reflection oriented (introversion). AORO is a low-inference, systematic observation instrument which requires the teacher to record observed behavior to determine students' learning styles. Action oriented students focus mainly outward toward people and things around them, while reflection oriented students focus primarily inward toward the private world of ideas. The use of AORO may help the teacher develop a new frame of reference for planning curriculum for the individual learner which is appropriately matched to the student's learning style. A review of research findings on AORO indicates that it is a valid instrument for improving teaching styles which contribute to increasing capabilities of the individual learner. (JD)

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Translating Learning Style Theory Into Classroom Practice:

A Way of Increasing Teacher Effectiveness Through The Determination of Individual Learning Styles

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There isn't a single teacher in the entire profession who has not, at least once, bemoaned the fact that "Thorndike couldn't learn his number facts," or that "Einstein couldn't pay attention, and was always daydreaming" or that "Picasso couldn't learn to read or write in grade school." As teachers continued to wrestle with the problems of individual learners, so did educators begin to appreciate the idea of individual learning styles and how these might deeply and profoundly influence a learner's capabilities to undertake specific learning tasks. (Cronbach and Snow, 1977; Dunn and Dunn, 1977; Hunt, 1971; Kagan, 1971; Medley, Soar and Soar, 1975.) As interest in teacher effectiveness and accountability grew, researchers began to identify the relationship between the teacher's ability to identify the cognitive strengths and weaknesses of the individual learner and improved learning performance. (Dunn and Dunn, 1974; 1977; Gordon, 1966; Hill, 1971; Kagan, 1971; Medley, Soar and Soar, 1975; Solomon and Kendell, 1976.) While the research and growing corpus of literature in the area of individual learning styles continues to capture attention, there is as yet little help for the classroom practitioner who continues to quest for how best to help the Thorndikes and Einsteins and Picassos. It has not been enough to document the relationship between the facilitation of learning and the teacher's ability to "plan curriculum which utilizes to maximum efficiency the natural inclination of children." (Dunn and Dunn, 1977.) Some provision must obviously be made

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for assisting teachers with the means of translating learning style theory into active classroom practice. Perhaps the absence of emphasis on means has had something to do with the noticeable absence of teachers' application of learning style theory in the real world of the classroom.

The work of Witkin, Moore, Goodenough and Cox (1977) provides us with a full spectrum analysis of the studies of cognitive styles and concludes that as educators make progress toward more precise specifications of cognitive styles, new ways of teaching students to use problem-solving strategies appropriate to those styles emerge. Dunn and Dunn (1977) present strong arguments for attention to the style of the individual learner. Their claim that "to bring students into one confining environment and to group them in any manner at all that makes educational sense is virtually an impossibility -- unless we examine each of these complex individuals and identify exactly how he or she is likely to learn most effectively." (p. 11). While providing supporting documentation in the cause of learning style theory, such admonitions to practitioners may result not only in increased frustration but also in outright hostility as teachers are left to flounder in a void of clear guidelines and implementation strategies. Those who are concerned with the translation of theory into practice need more than the affirmation that "when students are exposed to a teaching style consonant with the ways they believe they learn, they will improve on test scores, fact knowledge, attitude and efficiency, more than do those taught in a manner dissonant with their style. (Domino, 1970). While the literature abounds with researchers talking in ever-decreasing circles to other researchers, the quality of what is happening in classrooms vis a vis teachers' attention to individual learning style remains unchanged. Pick a classroom. Any classroom will do. Chances are that what you will see is the teacher, standing at his or her desk giving

the lesson, while 25 or so students sit at their desks, listening to the teacher. If children's styles of learning are different, and if teaching is supposed to reflect those differences, Miss Flintstone, of the Archive School, has yet to act on that accumulated wisdom.

In an attempt to bridge the gap between theory and practice, Dunn, Dunn and Price (1977) developed an instrument for classroom use which would identify the learner's "preferred learning style." The instrument, Learning Style Inventory (LSI) assesses (a) immediate environment; (b) emotionality; (c) sociological needs; and (d) physical needs. This instrument was one of the first steps taken towards the implementation of learning style theory. It's infrequent use by classroom teachers may reflect some of its limitations -- which appear to lie in several domains. First, and paradoxically, the many issues of learning styles addressed make its analysis far too complex and exhaustive a task for most teachers. The authors recommend a computer analysis of the results and such an analysis can include curriculum specifications for the individual's learning needs. However, such analysis is costly, difficult to come by and the number of possible preferences is likely to be overwhelming. A second weakness of the LSI lies in the fact that completion of the instrument requires a high level of literacy. Often, students most in need of such diagnostic procedures are the very ones with limited reading capability -- thus rendering the potential data collected virtually useless. A third shortcoming is manifest in almost every instrument which relies heavily on self-report -- and that is the assumption that students completing the instrument will respond honestly. Combs and Snygg (1959) suggest that when emotionality is in play, such an assumption would be suspect, at the very least, for the self-report, like any other behavior, "is a product of the individual's total phenomenal field, and is likely to be

dependent upon the clarity of the subject's awareness, social expectancy, cooperation of the subject and change in field organization." With such limitations, it is no wonder that the use of the LSI by classroom teachers is infrequently seen.

Several other devices for classroom implementation were also introduced. Cognitive Style Mapping (Hill, 1971) -- a very complex instrument demanding the administration of a four-hour test, also requires computer analysis for finding meanings in the responses. The S-Scale, of Guilford's Inventory of Factors STDCR, is designed to assess the action dimension of the sociobility trait. It was used in a study in which it was hypothesized that the more sociable student would achieve more under conditions permitting maximal student interaction while the less sociable student would achieve more under conditions of minimal interaction. (Beach, 1960). It may be that the contradictory and confusing results of the Beach study, which was more concerned with the personality of the learner than cognitive style, contributed to its very limited use in the application of learning theory of classroom practice.

AORO: Learning Style Theory into Classroom Practice

Dunn and Dunn have written that "matching student learning style characteristics and complementary methods and/or materials is one of the most potent responses to the public's demand for educational accountability. Using an appropriate learning style instrument to diagnose how the students learn is a professional requirement. (1977, p. 15).

The observation instrument AORO -- Action Oriented, Reflection Oriented, makes it possible for the classroom teacher to address the issue of translating learning style theory into classroom practice. The instrument was designed to help teachers to determine cognitive preferences of middle school

students, so that instruction might be then adapted to the individual learner. The basic assumption which underlies this instrument is that learning is enhanced when teaching strategies and materials take into account the natural bent of children toward action or reflection. Because the literature in learning styles reflects an awareness of both cognitive style as well as personality as factors which influence individual learning (Cronbach and Snow, 1977), AORO also provides the means of elevating awareness of personality factors as an important dimension of understanding individual learning style.

AORO and Jungian Theory

The supporting theory behind AORO has its basis in the works of Carl Jung and his discovery that "besides the many individual differences in human psychology there are also typical differences. Two types especially become clear to me. I have termed them the introverted and the extraverted type. When we consider the course of human life, we see how the fate of one individual is determined more by the objects of his interest, while in another it is determined more by his own inner self, by the subject. Since we all swerve rather towards one side or the other, we naturally tend to understand everything in terms of our own type." (Jung, 1971, p. 3). Jung's ideas add impetus to the notion that it is essential for the teacher to be aware of the student's preferred way of tuning into the world. In addition to the obvious fact of the student's preference, the teacher's own preferences may hinder this understanding unless some specific means is afforded him/her. Jung (1971) has warned that the value of one type is the non-value of the other. AORO was designed to be equally usable by both action and reflection oriented teachers. It was also designed to help teachers become more aware of the concept of "type" and the learning preferences which arise as a consequence of

action and reflection orientations. Such awareness makes possible an appreciation of and increased patience with opposite types. Moreover, it gives teachers specific clues in planning curriculum which may not be natural to them, but which meet the needs of both types of children in their classrooms.

AORO focuses upon student behaviors which indicate that a student's "attitude type" preference -- or as Jung defines it, indicating the broad area of the individual's interests either through an introverted or extraverted perspective.

> Extraverted people are, by nature, continuously alert to events outside themselves, turning outward to pick up cues, ideas, expectations, values and interests. This inclination to scan the environment gives them a variety of interests. In contrast, introverted people naturally look inward for resources and cues, and pursue fewer interests more deeply. Attending more often to the inner storehouse of perceptions and judgements, introverts take a reflective approach to life, while extraverts take an active, trial-and-error approach. Of course, extraverts often do look inward and introverts often do turn outward. All four pairs of preferences described in this section refer to habitual, but not constant tendencies. (Lawrence, 1982, p. 38)

AORO categorizes these two type preferences as action oriented (extraversion) or reflection oriented (introversion). While Jung also defines "function preferences" -- which indicate how a person deals with world he/she perceives, these preferences were not included in the design of AORO. Instead, the instrument emphasizes only "attitude type" preferences because they are, according to Jung, the most important preferences, affecting all other functions and being the most clearly visible.

It is important to note that the terms extraversion and introversion are not used with the derogatory connotations sometimes attributed to these classifications in western social contexts. One of the positive attributes of AORO is that there is no judgmental factor underlying the classifications.

AORO is not used to make value judgments about these two preferences; it merely indicates what the preferred mode of functioning is. Because of the social connotations of the words extravert and introvert, these terms were abandoned in favor of the more non-evaluative terms action orientation and reflection orientation. Action orientation is a preference for the outer world of people and things demonstrated by practical, active, vocal, group orientation. Reflection orientation is a preference for the inner world of concepts and ideas demonstrated by a subjective, reflective individual orientation.

Inward turning and outward turning go on in every student, every day. But each student prefers one mode over the other, uses that more frequently and is more comfortable with that one. Some focus mainly outward -- toward people and things in the world around them. Such pupils are more action oriented. Other pupils focus primarily inward toward the private world of ideas. Such children are more reflective -- or reflection oriented. Maturity grows when a person increases his/her capabilities to choose inward or outward turning, reflection or action, as each is dictated by a specific situation. Helping students to grow toward maturity by enabling them to increase their capacities to choose takes a very aware kind of planning and timing on the part of the teacher.

The teacher who is aware of the differences in type preferences of each learner, and who possesses some teaching strategies to enable both action and reflection oriented children to function in a way that is best for them will reduce immediately the tension and frustration for teacher and child. Moreover, that teacher will generate a climate in which each child's preferred orientation is equally valued and respected and in which action oriented and reflection oriented children learn from each other. When this can occur, the

chances for the teacher to feel a sense of success in teaching are enormously increased.

AORO is a low-inference, systematic observation instrument which requires the teacher to record what he/she sees in the behavior of students, allowing for the determination of action oriented or reflection oriented styles of learning. The instrument may be scored flexibly and there are no time requirements. It is relatively easy to use and easy to score -- making it a more useful classroom tool for the harried teacher. Clear and uncomplicated instructions are provided for its administration.

The process of using AORO results in the teacher's increased knowledge about the individual learner and his/her preferred mode of functioning. It is designed to help the teacher develop a new frame of reference for observing and understanding student behavior. Such data makes it possible for teachers to then plan curriculum for the individual learner which is more appropriately matched to his/her learning style.

AORO: Research Findings

The Action Orientation-Reflection Orientation instrument was developed by Mamchur (1978) and tested in a field research with six teacher observers and eight outside observers on a sample of ten middle school students and ten kindergarten students. Reliability was determined by correlating teacher observation scores with each other and with teacher rater scores. Three hypotheses were tested using Pearson Product Moment Correlation and Spearman Rank Correlation:

> There will be a significant and positive correlation between the teacher observers using AORO to score the students and the teacher raters using the teacher check list.

There will be a significant and positive correlation between teacher observers and outside observers using AORO to score the students.

There will be a significant and positive correlation between teacher rater, parent rater and student self-rater scores.

Average r and Sr correlations between the middle school teacher observers and the middle school teacher rater were .91 and .90 respectively and showed significant and positive agreement. Average r and Sr correlations between kindergarten teacher observers and teacher rater were .46 and .48 respectively and were not sufficiently high to be greater than would be expected on the basis of chance. Correlation of scores between middle school teacher raters and parents of middle school students were .70 and .60 respectively and were positive and significant. To further test the overall hypothesis, and to make it possible for data to be easily understood by classroom teachers, agreement between teacher observers, outside observers and teacher, parent and student self-raters were compared using simple percentage of agreement.

Teacher observer agreement of basic categories was tested by chi-square Test of Independence. The chi-square test statistic for middle school teacher observers was 11.34, exceeded the tabled value of 3.84, at the .05 level, and was positive and significant. Kindergarten teacher observers' scores were not compared using the chi-square test statistic due to lack of sufficient number of observations. The outside observer inter-observer category choices did not show a greater degree of agreement than would be expected on the basis of chance.

The findings from this study showed that AORO proved to be a valid instrument when used by experienced teachers who were familiar both with the

teaching process in general and with the students being observed in particular. These data suggested that AORO was a viable tool for teachers to use after they had had some experiences with teaching and with the children -- that is, well into the teaching year. However, since it is more valuable for teachers to possess this data about preferred orientation early in the school year, so that curriculum plans may be made at the beginning, rather than in mid-term, further research was conducted to test the degree of inference of the instrument. Lawrence and Branch (1978) illustrate the need for low-inference instruments in their discussion of peer support systems. Low inference items are described as being precise and evaluative. Although researchers prefer low inference, Gellert (1955) cautions that low inference items may distort behaviors in complex situations and his advice may be worth heeding. A more reasonable approach may be that suggested by Herbert and Attridge (1975), "that items be as low in the degree of observer inference required as the complexity of behavior under study will permit." (p. 1)

Pearson Product Moment Correlations were used to determine inter-observer agreement among nine student teachers who observed 10 pupils in the eighth grade. In choosing the students, rational rather than random selection was used. (Good, Biddle and Brophy, 1975). The nine student teachers had no teaching experience and no familiarity with the students being observed. Each student teacher read the Teachers Manual (Mamchur, 1978) designed to accompany AORO. Each student teacher agreed with every other observer in the determining of <u>action</u> and <u>reflection</u> orientation for all 10 pupils with one exception. That is, all correlations, except one, were over the critical value of .49, at the .05 level of significance for a one-tailed test with an <u>n</u> of 10. (Roscoe, 1975, p. 438). These correlations supported the hypothesis under investigation and contributed to the classification of AORO as a low-

inference instrument.

Other interesting data emerged from the study. Teachers and student teachers who had used the AORO instrument felt an increased sense of competence as teachers. If Combs' thesis that teacher educators must concern themselves with "providing experiences designed to help students see themselves as adequate, effective people" (Combs, 1965, p. 77) has validity, then the use of the AORO instrument can be seen as an important tool in the training of teachers.

Conclusions

It is frustrating and disappointing when valuable research findings which contribute enormously to our understanding of teaching and learning do not filter down into the day-to-day life in classrooms. The reasons for this are varied and complex; nevertheless one critical variable appears to be the lack of clear and uncomplicated teaching strategies available to practitioners which flow from the theoretical understandings generated by the research.

Learning style theorists have contributed greatly to our understanding of the need for knowledge about the particular, idiosyncratic and specific mode by which each learner confronts each learning task. Such knowledge, when it also has potential for identification of teaching strategies, curriculum development and materials selection, may contribute substantially to the increased capability of the individual learner. Yet, in the dozen years since the research data have been available, the application of learning style theory to classroom practices has been underwhelming.

The low-inference Action-Orientation/Reflection Orientation instrument may be an important tool in helping the classroom teacher to bridge the gap between theory and practice. It may work to promote not merely understanding, but also, some practical help in dealing with individual learning style thus working toward increased teaching effectiveness.

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